

# Charles P. Davis

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## Summary

I am a cognitive scientist interested in the cognitive and neural bases of semantic memory and its relation to language. Broadly, how do we know what things mean, how does the brain give rise to those meanings, how is meaning reflected in language structure, and how does language help us to organize semantic knowledge? I use a range of behavioral, computational, neuroimaging, and corpus techniques to answer these questions.

## Education

- PhD, Psychological Science**, *University of Connecticut*, Storrs, CT, USA 2021  
Advisor: Eiling Yee; Committee: Gerry Altmann, James Magnuson, Marie Coppola
- MS, Psychological Science**, *University of Connecticut*, Storrs, CT, USA 2018  
Advisor: Eiling Yee; Committee: Gerry Altmann, James Magnuson, Marie Coppola
- Honours BA, Psychology**, *Brock University*, St. Catharines, ON, Canada 2013  
First-Class Standing; Minor: Philosophy; Concentration in German

## Publications

- Davis, C. P.** & Yee, E. (2021). Building semantic memory from distributional language and embodied experience. *WIREs Cognitive Science*. [doi:10.1002/wcs.1555](https://doi.org/10.1002/wcs.1555)
- Ekves, Z., Prystauka, Y., **Davis, C. P.**, Yee, E., & Altmann, G. T. M. (2021). Psychology of cleansing through the prism of intersecting object histories. *Behavioral and Brain Sciences*. [doi:10.1017/S0140525X20000552](https://doi.org/10.1017/S0140525X20000552)
- Davis, C. P.**, Yee, E., & Eigsti, I. M. (accepted). Beyond the social domain: Autism-spectrum traits and the embodiment of manipulable object concepts. To appear in S. L. Macrine & J. Fugate (Eds.), *Movement matters: How embodied cognition informs teaching and learning*. MIT Press.
- Davis, C. P.**, Joergensen, G., Boddy, P., Dowling, C., & Yee, E. (2020). Making it harder to “see” meaning: The more you see something, the more its conceptual representation is susceptible to visual interference. *Psychological Science*. [doi:10.1177/0956797620910748](https://doi.org/10.1177/0956797620910748)
- Botvinik-Nezer, R., Holzmeister, F., Camerer, C. F., Dreber, A. Huber, J., ... **Davis, C. P.**, ... Poldrack, R., & Schonberg, T. (2020). Variability in the analysis of a single neuroimaging dataset by many groups. *Nature*. [doi:10.1038/s41586-020-2314-9](https://doi.org/10.1038/s41586-020-2314-9)
- Davis, C. P.**, Altmann, G. T. M., & Yee, E. (2020). Situational systematicity: A role for schema in understanding the differences between abstract and concrete concepts. *Cognitive Neuropsychology*. [doi:10.1080/02643294.2019.1710124](https://doi.org/10.1080/02643294.2019.1710124)
- Davis, C. P.**, Altmann, G. T. M., & Yee, E. (2020). Language as a mental travel guide. *Behavioral and Brain Sciences*, 43, E125. [doi:10.1017/S0140525X19003182](https://doi.org/10.1017/S0140525X19003182)
- Davis, C. P.**, Morrow, H. M., De Luca, M., & Lupyan, G. (2020). [The generality and origins of form-to-meaning iconicity](#). In Ravnani, A., Barbieri, C., Martins, M., Flaherty, M., Jadoul, Y., Lattenkamp, E., Little, H., Mudd, K. & Verhoef, T. (Eds.): *The Evolution of Language: Proceedings of the 13th International Conference (EvoLang13)*.
- Davis, C. P.**, Morrow, H. M., & Lupyan, G. (2019). What does a horgous look like? Nonsense words elicit meaningful drawings. *Cognitive Science*. [doi:10.1111/cogs.12791](https://doi.org/10.1111/cogs.12791)
- Davis, C. P.**, Libben, G., & Segalowitz, S. J. (2019). Compounding matters: The P100 as an index of semantic access to compound words. *Cognition*. [doi:10.1016/j.cognition.2018.12.006](https://doi.org/10.1016/j.cognition.2018.12.006)

- Davis, C. P.**, & Yee, E. (2019). Features, labels, space, and time: Factors supporting taxonomic relationships in the anterior temporal lobe and thematic relationships in the angular gyrus. *Language, Cognition and Neuroscience*. [doi:10.1080/23273798.2018.1479530](https://doi.org/10.1080/23273798.2018.1479530)
- Davis, C. P.**, Paz-Alonso P. M., Altmann, G. T. M., & Yee, E. (2019). [Abstract concepts and the suppression of arbitrary episodic context](#). In A. K. Goel, C. M. Seifert, & C. Freksa (Eds.), *Proceedings of the 41st Annual Conference of the Cognitive Science Society* (p. 1592–1598). Montreal, QC: Cognitive Science Society.

## Under Review and in Preparation

- Davis, C. P.**, Eigsti, I. M., Healy, R., Joergensen, G. H., & Yee, E. (2020; preprint). Autism-spectrum traits predict the embodiment of manipulation knowledge about object concepts: Evidence from eye tracking. [doi:10.31234/osf.io/k4ubf](https://doi.org/10.31234/osf.io/k4ubf)
- Davis, C. P.**, Paz-Alonso P. M., Altmann, G. T. M., & Yee, E. (in revision). Encoding and inhibition of arbitrary episodic context with abstract concepts.
- Davis, C. P.**, Xia, Q., & Yee, E. (under review). Exploring whether physical distance engenders differences in concept meaning.
- Davis, C. P.** & Yee, E. (in prep). Time as an embodied property of concepts.
- Davis, C. P.**, Joergensen, G. H., & Yee, E. (in prep). Low-level auditory interference does not disrupt processing of auditorily experienced concepts.

## Invited Talks and Workshops

- The “cons” of using fMRI to understand cognition: Replicability and other obstacles*. Invited as part of a debate: *Using fMRI for cognitive research*. (2021). University of Connecticut Neurobiology of Language January Term Primer.
- Data visualization in R with ggplot2*. (2018). University of Connecticut Neurobiology of Language January Term Primer.

## Posters and Presentations

- Davis, C. P.**, Xia, Q., & Yee, E. (2021, July). Exploring whether physical distance engenders differences in concept meaning. Poster to be presented at the 43rd Annual Meeting of the Cognitive Science Society. Remote conference.
- Davis, C. P.**, Lautz, N., & Yee, E. (2021, March). A graded role for the visual system in perceptual simulation during language processing? Poster presented at the 28th Annual Meeting of the Cognitive Neuroscience Society. Remote conference.
- Davis, C. P.** & Lupyan, G. (2020, July). The iconicity of random words. Presented at the 42nd Annual Meeting of the Cognitive Science Society. Remote conference.
- Davis, C. P.**, Morrow, H. M., De Luca, M., & Lupyan, G. (2020, April). The generality and origins of form-to-meaning iconicity. Accepted at the 13th International Conference on the Evolution of Language, Brussels, Belgium. [Conference cancelled due to COVID-19 outbreak.]
- Heffner, C. C., **Davis, C. P.**, & Myers, E. B. (2019, August). Behavioral and neural correlates of phonetic plasticity. Presented at the 11th Annual Meeting of the Society for the Neurobiology of Language, Helsinki, Finland.
- Davis, C. P.**, Paz-Alonso P. M., Altmann, G. T. M., & Yee, E. (2019, July). Abstract concepts and the suppression of arbitrary episodic context. Presented at the 41st Annual Meeting of the Cognitive Science Society, Montreal, QC, Canada.
- Davis, C. P.**, Paz-Alonso P. M., Altmann, G. T. M., & Yee, E. (2019, March). Is arbitrary episodic context suppressed in abstract concepts? Presented at the 26th Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA.
- Healy, R., Serino, J., **Davis, C. P.**, Joergensen, G., & Yee, E. (2018, March). Understanding “thunder” is more difficult than “rainbow” when performing an auditory task. Presented at the 25th Annual Meeting of the Cognitive Neuroscience Society, Boston, MA.

- Davis, C. P.**, Paz-Alonso P. M., Altmann, G. T. M., & Yee, E. (2018, March). Encoding of episodic context in abstract and concrete concepts. Presented at the 25th Annual Meeting of the Cognitive Neuroscience Society, Boston, MA.
- Davis, C. P.**, Joergensen, G., & Yee, E. (2017, November). Silence! An auditory task disrupts processing of auditorily experienced concepts. Presented at the 58th Annual Meeting of the Psychonomic Society, Vancouver, BC, Canada.
- Davis, C. P.**, Joergensen, G., Boddy, P., Dowling, C., & Yee, E. (2017, November). Get your head out of the clouds: Performing a visual task makes it harder to think about art than music. Presented at the 25th Annual Workshop on Object Perception, Attention, and Memory, Vancouver, BC, Canada.
- Davis, C. P.**, Libben, G., & Segalowitz, S. J. (2017, March). Why not both? Form and meaning affect early visual processing of compound words. Presented at the 30th Annual CUNY Conference on Human Sentence Processing, Cambridge, MA.
- Davis, C. P.**, Libben, G., & Segalowitz, S. J. (2016, November). Word concreteness and the processing of compound words. Presented at the 57th Annual Meeting of the Psychonomic Society, Boston, MA.
- Libben, G., **Davis, C. P.**, & Segalowitz, S. J. (2016, February). *Compound words, semantic transparency, and metaphors for morphological representations in the brain*. Presented at International Morphology Meeting 17, Vienna, Austria.
- Davis, C. P.**, Libben, G., & Segalowitz, S. J. (2014). Compounding matters: The P1 as an index of semantic access to compound words. *Psychophysiology*, 51(Suppl 1), S34.
- Davis, C. P.**, Libben, G., & Segalowitz, S. J. (2014, September). *Morphological transcendence: Morphemic boundary ambiguity produces conflict at the N4*. Presented at the 9th International Meeting on the Mental Lexicon, Niagara-on-the-Lake, ON, Canada.
- Davis, C. P.**, Libben, G. & Segalowitz, S. J. (2014, September). *Compounding matters: The P1 as an index of semantic access to compound words*. Presented at the 9th International Meeting on the Mental Lexicon, Niagara-on-the-Lake, ON, Canada.
- Martini, T. S., Capuana, L., Blank, C., **Davis, C. P.**, & Judges, R. (2014, January). *Psychology undergraduates' understanding of skill-based learning outcomes*. Presented at the Annual Meeting of the National Institute for the Teaching of Psychology, Tampa, FL.
- Davis, C. P.** (2012). *Predicting homosexuality from digit ratios (2D:4D), handedness, and fraternal birth order: A multivariate analysis in men and women*. Undergraduate Honours Thesis, Brock University, St. Catharines, ON, Canada.

## Teaching Experience

### Instructor of Record

University of Connecticut  
Psychology of Language

Summer 2021

### Lab Instructor

University of Connecticut  
Research in Psychology  
Introductory Psychology

2019–Present  
2015–17

### Brock University

Statistics and Research Design in the Behavioural Sciences  
Introduction to Psychology

2010–12  
2012–13

### Guest Lecturer

University of Connecticut  
Foundations of Cognitive Science (Neuroscience; Connectionism)  
Psychology of Language (Semantic Memory)

2021  
2015–16

### Eastern Connecticut State University

Physiological Psychology (Semantic Memory)

2018

## Teaching Assistant

### University of Connecticut

Foundations of Cognitive Science	2021
Cognitive Psychology	2020
Graduate Statistics: Research Foundations	2019–2020
Psychology of Language	2015–16

### Brock University

Psychology Students' Transition to Work	2014–15
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## Applied Experience

CT Institute for the Brain and Cognitive Sciences/Brain Imaging Research Center Research Assistant in Neuroimaging	2017–19
Cactus Communications Academic Editor: Second-Language English Editing; Publication Support	2013–19
Introduction to Psychology: Gateways to Mind and Behavior (Mitterer and Coon, 2014) Copyeditor	2013–14
Ontario Brain Injury Association Research and Data Analysis Specialist (summer co-op position)	2011

## Awards and Distinctions

University of Connecticut Doctoral Dissertation Fellowship	2020
NSF-IGERT Innovation Grant: <i>Learning a phonologically engineered embodied language system</i>	2019
CT Institute for the Brain and Cognitive Sciences IBRAiN Fellowship in Neuroimaging	2017–19
NSF-IGERT Innovation Grant: <i>The role of language in two systems for category learning</i>	2018
CT Institute for the Brain and Cognitive Sciences Summer Graduate Fellowship	2016–17
NSERC Ontario Graduate Scholarship (declined offer)	2015
NSERC Canada Graduate Scholarship (runner-up)	2015
Brock Scholar's Award	2008–12
John Lavery Scholarship	2011
Brock Alumni Honours Scholarship	2011
Dean's Honours List	2008–13

## Service and Activity

### **Ad-hoc Reviewing**

Cognition  
Cognitive Science  
Journal of Experimental Psychology: General  
Journal of Experimental Psychology: Human Perception and Performance  
Language & Cognition  
Neuroscience and Biobehavioral Reviews  
PLOS ONE  
Psychological Science

### **Professional Affiliations**

Cognitive Science Society  
Cognitive Neuroscience Society  
Psychonomic Society

## **Students Mentored**

Qi Xia (BSc, Cognitive Science)

*The effects of physical distance on semantic similarity of abstract and concrete concepts*

Brandon Strom (BSc, Cognitive Science)

*The role of context in learning abstract and concrete concepts.*

Roisin Healy (BSc, Psychological Science)

*The role of autism-spectrum traits in the embodiment of manipulable object concepts.*

Caitlin Dowling (BSc, Psychological Science)

*Auditory word comprehension while performing a visual task*

## **Committee Activity**

Cognitive Science Society Member Abstract Review Committee	2021
UCONN Psychological Science Computer Committee Student Representative	2016–20
UCONN Graduate Student Advisory Committee: Representative	2016–19
UCONN Brain Imaging Research Center High-School Visit Host	2018, 2019
Eastern Connecticut State University Psychology Club Graduate Panelist	2018
Department of Psychological Science Graduate Colloquium Night Organizer	2018, 2019
CT Institute for the Brain and Cognitive Science Robust Statistics Workshop Organizer	2016
Expressive Communication and Origins of Meaning Reading Group Coordinator	2016
University of Connecticut IGERT Prospective Student Visit Committee	2016
University of Connecticut IGERT TalkShop Series Moderator	2015–16

## **Technical Skills**

R	E-Prime experiment design software
Linguistic and behavioral corpora/databases	Python
fMRI data analysis in AFNI, FSL, Freesurfer	Qualtrics survey software
Human Connectome Project MRI (structural and functional) data processing	Amazon Mechanical Turk
Shell scripting	Twitter API data analysis
Gorilla online experiment software	Natural language processing
Experiment Builder software	Vector-based semantic analysis
Presentation experiment design software	EEG acquisition
PsychoPy experiment design software	EEG/ERP data analysis in EEGLab (Matlab)
	SPSS